

EMTB83A8D-32.768K

[Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on Aug 3, 2020)


[Click badges to download compliance docs](#)

Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.



ITEM DESCRIPTION

Temperature Compensated MEMS Clock Oscillators TCMO LVC MOS (CMOS) 3.3Vdc 4 Pad 0.8mm x 1.5mm Chip Scale Package (CSP) 32.768KHz -40°C to +85°C

ELECTRICAL SPECIFICATIONS

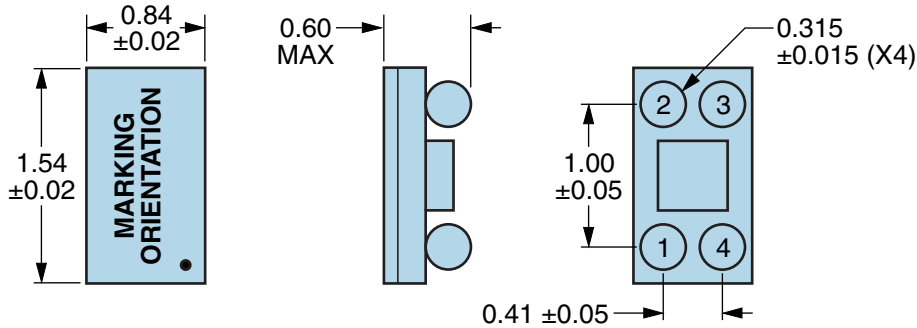
Nominal Frequency	32.768KHz
Frequency Stability	±5.0ppm Maximum (Inclusive of Operating Temperature Range, Output Load Change (±20%), and Reflow, at Vdd=3.3Vdc)
Frequency Stability vs. Frequency Tolerance	±5.0ppm Maximum (Measured at 25°C ±2°C, at Vdd=3.3Vdc, Post Reflow)
Frequency Stability vs. Input Voltage	±0.75ppm Maximum (±10%)
Frequency Stability vs. Aging	±1ppm/Year Maximum (at 25°C)
Operating Temperature Range	-40°C to +85°C
Supply Voltage	3.3Vdc ±10%
Core Operating Current	0.99µA Typical (at 25°C), 1.52µA Maximum
Output Stage Operating Current	0.065µA/Vpp Typical, 0.125µA/Vpp Maximum
Input Current	1.2µA Typical (at 25°C), 2.0µA Maximum (No Load, Nominal Vdd)
Output Voltage Logic High (Voh)	90% of Vdd Minimum (IOH = -10µA)
Output Voltage Logic Low (Vol)	10% of Vdd Maximum (IOL = +10µA)
Rise/Fall Time	100nSec Typical, 200nSec Maximum (Measured at 10% to 90% of waveform)
Duty Cycle	50 ±2(%) (Measured at 50% of waveform)
Load Drive Capability	15pF Maximum
Output Logic Type	CMOS
Peak to Peak Jitter (tPK)	2.5µSec Maximum
Period Jitter (RMS)	33nSec Typical (Measured at 25°C)
Power Supply Ramp	100mSec Maximum (Measured at 0Vdc to 90% of Vdd)
Start Up Time	180mSec Typical, 380mSec Maximum (Measured at Nominal Vdd)
Storage Temperature Range	-55°C to +125°C

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

ESD Susceptibility	JESD22-A114, HBM, 3000V
Flammability	UL94-V0
Mechanical Shock	MIL-STD-883, Method 2002, Condition E, 10,000G
Moisture Sensitivity	J-STD-020, MSL 1
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	JESD22-A104, Condition G
Vibration	MIL-STD-883, Method 2007, Condition C, 70G

EMTB83A8D-32.768K [Click part number to visit Part Number Details page](#)

MECHANICAL DIMENSIONS (all dimensions in millimeters)



PIN	CONNECTION
1	Ground
2	Output
3	Supply Voltage
4	Ground

LINE	MARKING
1	XX XX=Ecliptek Manufacturing Identifier
2	XXX XXX=Ecliptek Manufacturing Identifier (continued)

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ± 0.1

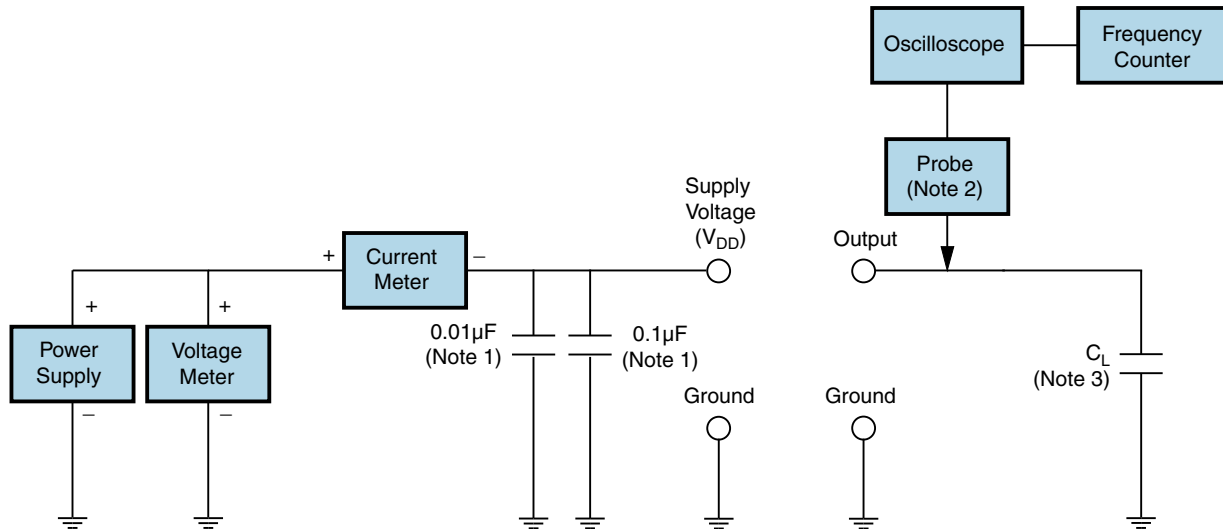
EMTB83A8D-32.768K [Click part number to visit Part Number Details page](#)

OUTPUT WAVEFORM



EMTB83A8D-32.768K [Click part number to visit Part Number Details page](#)

Test Circuit for CMOS Output



Note 1: An external 0.01 μ F ceramic bypass capacitor in parallel with a 0.1 μ F high frequency ceramic bypass capacitor close (less than 2mm) to the package ground and supply voltage pin is recommended.

Note 2: A low input capacitance (<12pF), 10X Attenuation Factor, High Impedance (>10Mohms), and High bandwidth (>300MHz) passive probe is recommended.

Note 3: Capacitance value C_L includes sum of all probe and fixture capacitance. See applicable specification sheet for 'Load Drive Capability'.

EMTB83A8D-32.768K [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

T_s MAX to T_L (Ramp-up Rate)	3°C/Second Maximum
Preheat	
- Temperature Minimum (T_s MIN)	150°C
- Temperature Typical (T_s TYP)	175°C
- Temperature Maximum (T_s MAX)	200°C
- Time (t_s MIN)	60 - 180 Seconds
Ramp-up Rate (T_L to T_P)	3°C/Second Maximum
Time Maintained Above:	
- Temperature (T_L)	217°C
- Time (t_L)	60 - 150 Seconds
Peak Temperature (T_P)	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (T_P Target)	250°C +0/-5°C
Time within 5°C of actual peak (t_p)	20 - 40 Seconds
Ramp-down Rate	6°C/Second Maximum
Time 25°C to Peak Temperature (t)	8 Minutes Maximum
Moisture Sensitivity Level	Level 1
Additional Notes	Temperature shown are applied to body of device.

EMTB83A8D-32.768K [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

Ts MAX to TL (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum (Ts MIN)	N/A
- Temperature Typical (Ts TYP)	150°C
- Temperature Maximum (Ts MAX)	N/A
- Time (ts MIN)	60 - 120 Seconds
Ramp-up Rate (TL to TP)	5°C/Second Maximum
Time Maintained Above:	
- Temperature (TL)	150°C
- Time (tL)	200 Seconds Maximum
Peak Temperature (TP)	240°C Maximum
Target Peak Temperature (TP Target)	240°C Maximum 2 Times / 230°C Maximum 1 Time
Time within 5°C of actual peak (tp)	10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time
Ramp-down Rate	5°C/Second Maximum
Time 25°C to Peak Temperature (t)	N/A
Moisture Sensitivity Level	Level 1
Additional Notes	Temperature shown are applied to body of device.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperature shown are applied to body of device.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperature shown are applied to body of device.)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Ecliptek:](#)

[EMTB83A8D-32.768K](#)



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331